

## Section 5-1: Elements of Geometry

**By the end of this lesson, you should be able to answer:**

- What are the fundamental geometric concepts?
- What are the basic geometric postulates and how do you use them?

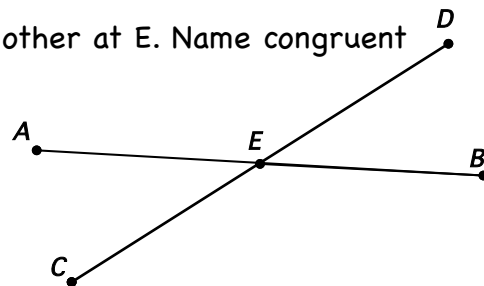
**Where you might see this in the real world:**

- Construction, art, photography, navigation

Define the following terms:

1. Geometry
2. Point
3. Line
4. Plane
5. Space
6. Collinear points
7. Noncollinear points
8. Coplanar points
9. Noncoplanar points
10. Intersection
11. Congruent line segments
12. Midpoint of a segment
13. Bisector of a segment
14. Postulate

Example 1: In the figure,  $\overline{AB}$  and  $\overline{CD}$  bisect each other at E. Name congruent segments.



### Point, Line, and Plane Postulates:

Postulate 1:

Postulate 2:

Postulate 3:

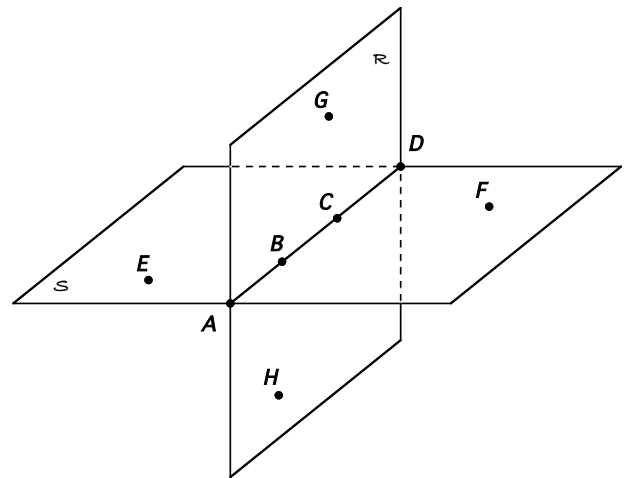
Postulate 4:

Example 2: Refer to the diagram to name the types of points indicated.

a. Three or more collinear points

b. All points that are coplanar with point F

c. All points that are coplanar with point E and noncollinear with point D



Example 3: Refer to the figure in Example 2 to answer the following.

a. How would you classify the intersection of the two planes?

b. If B and E were to be connected by a line, which plane would they be in?

c. Are F and G able to be connected by a line?

Problem Set:

*"Nothing in life is to be feared. It is only to be understood." - Marie Curie*